

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Alan Kaul <kaul@netcom.com>
Subject: [5934] 49-er Measurements
Message-ID: <Pine.3.89.9603201225.A6540-0100000@netcom22>

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Frank Paxton III <paxton@sound.net>
Subject: [5938] 49er - jfet substitution NTE 312 and EGC 312]
Message-ID: <31507F9C.4A8B@sound.net>

Frank Paxton III wrote:

>
> Alan Kaul wrote:
> >
> > Frank-- I built one with the NTE 312 (I think the pins are reversed!!!)
> > and it didn;t work. I found a 2n5484 and replaced the 312 and now it
> > works fine. Dump the NTE if you can!! 73/72 de alan
> >
> > [Alan Kaul, W6RCL] kaul@netcom.com
> >
>
> i checked my ECG book. YEP THE LEADS ARE REVERSED on these devices
> (with respect to the silkscreened symbol on the 49er board.)
>
> soooo...i pulled out the 312 and put it back in BACKWARDS and YES IT
> WORKS FINE !!!!!
>
> go figure...
>
> thanks to alan kaul, w6rcl, for the insight..... worked AE4GM on my
> first contact last nite on the 49er... what a neat radio. i LOVE it.
>
> frank. ng0n.

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Rich_Stern_at_WFF-E105@ccmail.gsfc.nasa.gov
Subject: [5935] CANARY ISLANDS/ EA7-LAND/ TRIP UPDATE
Message-ID: <9602208273.AA827367926@ccmail.gsfc.nasa.gov>

FINALLY ... got paper work from ARRL for SPAIN. Everyone who has contacted me have been most informative. K8CH@ARRL.ORG was more than cooperative in getting the proper forms to my site.

One thing that slowed me up was the \$100.00 fee for the reciprocal license. Wow!... But, you'll be glad to know I swung that too!

The Moral Activities Committee here at Wallops Island has allocated the money to our fledging Wallops Island (NASA) Amateur Radio Club (KE3ND). Now, in the next couple days I have to get the paperwork expedited. If anyone out there can help with that I'd appreciate it.

Thanks again!... I'll keep posting progress on this ... I hope it flys.

GEAR AT THE MOMENT:

ICOM 735 *** ICOM LINEAR *** CUSHCRAFT R7

de NW3N

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: "JOHN F. McCLUN" <JFM001@DENTAL3.AB.UMD.EDU>
Subject: [5926] DDS Proto Board, Rcvr Chip & CP Contrlr 4Sale
Message-ID: <199603201706.MAA28329@comm1.ab.umd.edu>

Gang -

Well, I have been working for about 6 months on a Blue Earth Computer controller connected to an AD7008 DDS as a vfo for a QRP transmitter/recvr. I have had some success as the transmitter works.

I have NO MORE time for designing the receiver or creating an integrated unit. ;'(:'(. I am going to try and sell the items to someone who would continue to make a workable system or would like to experiment with DDS vfo's. So here is my list:

AD7008 Prototyping Board from Analog Devices. Single +5 supply, 32 bit phase accumulator, on chip 10 bit DAC, sine - cosine look up tables, 50 mhz speed. Board originally was \$295 when I bought it.

AD607 Single chip receivers - 3 ea. These items are VERY RARE!!! Used with the AD7008 for full AM, FM, CW, BPFSK, FSK receiver.

*** Blue Earth 80C51 Prototype Board controller*** Comes with display, 16 & 4 keypad, 12 I/O lines for controlling devices, Tiny basic built in interpreter, Com port cable. Cost over \$250 new.

All of this can be used for making your own DDS vfo, transceiver, frequency synthesizer, etc. I am looking for a Sierra Kit with modules

in trade, OHR 4 Bander +, money, other kits, offers (virgins, trips to Mars, Cryo storage facility for internment) :) .

I am going away for two weeks, so please E-MAIL to:
mcclun@clark.net and not the server listed here.

72&73

John N3REY

Always QRP!

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: wdzeares@rockdal.aud.alcatel.com
Subject: [5922] FOX, Addiction, AA and Church
Message-ID: <9603201602.AA12955@aud.alcatel.com>

I did a terrible job at HUMOR yesterday in my post about the FOX and wanting at least two per week...

I was trying to say that I am "addicted" to the FOX and if Chuck cuts it down to one I will have Major problems dealing with it and I might have to go (JOKE) to AA meeting and even Church to deal with NO FOX!!!!

By the way AA meetings are great and I play Violin in the Church orchestra....but I still "need" the FOX... and I can hardly wait till next FOX season...

Thanks for all the concerned email about my "addiction"

72 Dennis K3ETS

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Jerry <jfelts@rapidcity.com>
Subject: [5945] FS-ARGO 509
Message-ID: <199603210259.TAA04198@host1.rapidcity.com>

Since I got a ARGO 556, I'd like to sell my ARGO 509. Untill I got the ARGO 556 the 509 was my main rig, now all it does is collect dust. I want \$230 for the rig plus \$5 for shipping. If interested send E-mail.

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996

From: wdzeares@rockdal.aud.alcatel.com
Subject: [5919] FS: OHR Sprint II 30M
Message-ID: <9603201522.AA10412@aud.alcatel.com>

sorry I forgot to say it is a Sprint II for 30M
ordered from Marshall yesterday. see previous
posting. 72 dennis k3ets

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: wdzeares@rockdal.aud.alcatel.com
Subject: [5917] FS: OHR Sprint II new in Box
Message-ID: <9603201518.AA09963@aud.alcatel.com>

I over-reacted and called Marshall and ordered the very
last Sprint II that he had yesterday... but after thinking
about it, I really want to build something else...so
I will sell the Sprint II for the same \$65 plus \$3 shipping
and I will not even open the box but send it direct to buyer...
email: wdzeares@ix.netcom.com or wdzeares@aud.alcatel.com
72/73 Dennis K3ETS Dallas

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: "Tom Bowman (NBN)" <tbowman@nbn.net>
Subject: [5941] Fwd: 49-er Measurements
Message-ID: <199603202337.SAA12426@users.nbn.net>

-- [From: Tom Bowman (NBN) * EMC.Ver #2.5.02] --

Alan's readings forced me to turn to the text books...It's been about 11
years since I earned a living in front of a spectrum analyzer.

And I'm awfully rusty when it comes to theory. But I believe a single-
section pi-filter like in the output of the 49er should attenuate more than
16 dB at the second harmonic.

That's like the filter isn't even present.

The books say to expect an unfiltered second harmonic 10 to 15 dB down
from the fundamental frequency.

Unfortunately, all the tables I've been looking through show two-section
pi-filters. I'm seeing Cadilacs when I want a Yugo.

I realize the filter in the 49er uses a choke because the goal was to keep
things small.

So- what's the best spurious attenuation that can be expected from a
single-section pi filter using optimum Q in the coil when designing the
filter?

As an aside- harmonic content was measured at 12 vdc. What did the second

harmonic look like at the 9 volts it was designed to operate at???? Wouldn't running the output transistor at 12 vdc present a different impedance and throw off the filter calculation?

HARMONIC CONTENT (using 12V power supply, at 7.040 mHz, 0.70 watts)

	F1	F2	F3
Freq	7.040	14.080	21.120
Signal	0 dB	-16 dB	-38 dB

--

Tom Bowman, WA3REY, qrp-1 #125, QCWA, Mt.Gretna, PA <><

tbowman@nbn.net

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Bob Lombardi <blombard@bb.iu.net>
Subject: [5916] IC735 and QRP
Message-ID: <Pine.SUN.3.90.960320073824.6509A-100000@bb.iu.net>

Folks,

I'm fairly new to this list, but I've heard some sort of story that there is a simple mod to the IC735 that will allow you to go below 10 watts.

Could someone tell me if it's true, and if so, what parts get changed or tweaked or whatever?

73,
Bob

Bob Lombardi WB4EHS from Melbourne, FL >>>> blombard@iu.net
The average male bicycle rider consumes 375 calories to ride 10 miles.
The average car uses 1/2 gallon of gasoline, or 18,600 calories, to go
the same distance. -- from Bicycle Guide magazine, July 1994

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: adams@chuck.dallas.sgi.com (chuck adams)
Subject: [5914] LeHigh.EDU stuff [long]
Message-ID: <199603201141.LAA12793@chuck.dallas.sgi.com>

Gang,

Here is some important stuff, if you haven't gotten the welcome.txt lately from LeHigh.EDU. This will also answer some other topics/discussions that have come up.

Now boys and girls remember that all these commands go to LISTSERV@LEHIGH.EDU and should not be sent to the QRP-L address. The flame wars will start or the network police will remind you of such errors in your ways. :-) It's probably not much different than the same thing that would happen to you if you transmitted on the air on top of a rare DX station. :-)

All the following based on the fact that you are a member of this group and have subscribed correctly.

0: If you wanna quit the group 'cuz you parents won't give you any more allowance, then to LISTSERV@LEHIGH.EDU send the following in the body of the message (the listserv can't read too well and tends to ignore the subject line since you aren't going to stick with it anyway, at least that's what I do :-))

UNSUBSCRIBE QRP-L

- 1: Please please remember the following. If you are ABOUT to change email servers and/or email address, then unsubscribe and then with the new address resubscribe to the group. The system has failsafe/security stuff in place (remember we are on the super-info-highway) that will not allow another address to do stuff to/for you.
- 2: To get your own personal number for this group, use in the body of an email to listserv@lehigh.edu, the following:

RUN QRP-L X GETNR callsign

- 3: To find out who's who on the numbering (email returned to you with the info):

GET QRP-L/MISC MEMBER_NUMBERS.TXT

I ran this and I got back 485 as the count so far. That's not quite half the group so far.

4: You want to get all the days news in one gigantic email then

SET QRP-L MAIL DIGEST

If you're going on vacation, or you just want to stop receiving QRP-L for a while

SET QRP-L MAIL POSTPONE

Then when you wanna start it back up in real time

SET QRP-L MAIL ACK

Use this command to receive a list of all QRP-L subscribers.

RECIPIENTS QRP-L

If you wanna list sorted by call area (just to check out your neighbors) then send in

RUN QRP-L X QRP_CALL

5: The topic of miles/watt and distances and where are you came up and I responded to the first posting but did not cc: to the group, but here are some notes.

If you work US to US, then you can do the following:

RUN QRP-L X CALLS2DIST K5FO N6KR

I do this all the time when I work another station. The above example I work the famous Wayne Burdick and I wanna do two things. I want to just see how far my peanut whistle or his 49er got and to get his current mailing address to drop him a QSL into the mailbox. I put the distances in the log.

In a little while (and don't rush this 'cuz you are on the super highway and some mail services are faster than others) you'll get back email from LeHigh that looks something like:

From: Lehigh University List Server <listproc@Lehigh.EDU>
Subject: RUN QRP-L X calls2dist k5fo n6kr
Status: R

Output from stdout:

K5FO ZIP = 75218
N6KR QTH = BURDICK, WAYNE A
74 ELM ST
SAN CARLOS CA 94070

K5FO Lat/Long = 32 47 00 N 96 48 00 W
N6KR Lat/Long = 37 30 26 N 122 15 34 W

Output from "gc 32.4700N96.4800W 37.3043N122.1556W":

Bearing is 290 Degrees for 1277 Nautical Miles = 1469 Miles = 2364 Km

In plain English (well as good as a Texan can do) all this means is that the first call (mine) is the point of origin and I'm at the Latitude/Longitude given and Wayne is at the other. The numbers are converted into form of DD.MM for degrees.minutes and the seconds are converted into a fraction and added on. Thus 15 minutes 34 seconds becomes 1556. The rest is left as an exercise to the student. :-)

As you can see he is 1,469 miles from me or I'm 1,469 miles from him. :-) So at 0.95W --- 1,469miles/0.95W yields 1,546 miles/watt. Wayne was my first NorCal40a to NorCal40a contact and I'm just waiting for our first 49er to 49er contact.

OK, all this for US to US. Now what do you do if you really really catch a wave and get someone outta the USofA or DX to DX or any combo thereof. That's a tough one until someone tells me of a complete World Database on the super-highway. Someone can post to the list info on the geo-servers again or any new stuff that might help.

I have my trusty "Oxford Concise Atlas of the World" which cost me \$30 at my bookstore. One of the few Atlas' pubs now that has the long/lat data. So I go look up the QTH and I can tell you that not every place in the world is in the atlas. You convert the long/lat

data into the proper format and send the command

```
RUN QRP-L X GC 40.3476N75.2046W 32.4700N96.4800W
```

and you will get back the distance. Then you can calculate the miles per watt number.

Now for the really really nit-pickers. A one minute error in one of the numbers gives a two mile error in a test case I ran for 1300 miles, so there are more critical factors involved than trying to get GPSS data to the cm level. Like, can we trace back to the Bureau of Standards a calibrated voltage standard and make sure that we have diode parameters, RF currents measured, battery levels, SWR at the time of the contact, etc. to get power levels. You can write a book on this topic alone.

What I did is go one degree E,W,N, and S of the "real point" and the corners of a square with one degree changes in long/lat, thus 9 points and got the worst case of two miles.

OK, sorry for the lengthy posting, but wanted to illustrate that Jim Eshleman has done a great job at LeHigh.EDU in providing this group an excellent site for a wealth of information and tools that make this fun.

--

Chuck Adams (K5FO CP-60) adams@sgi.com
Box 181150, Dallas, TX 75218-8150

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: stelpony@ix.netcom.com (Steel Pony)
Subject: [5913] Mini-circuits MCL-4-3
Message-ID: <199603200419.UAA01885@ix12.ix.netcom.com>

Hi Folks:

Bought a new MCL PSC-4-3 in the same package as the SBL-1 but unfamiliar with the 4-3.

Does Mini-Circuits have a web page? Does anyone have a current adr. for them? Do you know what it does? Should I feed the dog every day? :-)

Thanks,

John, N5INZ
QRP-L #458
NorCal- ?

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Paul Harden <pharden@aoc.nrao.edu>
Subject: [5937] More audio from LM380/40-9er
Message-ID: <199603202158.0AA27814@zia.aoc.nrao.edu>

I do not have a 40-9er yet (Wayne: note correct spelling -hi), but do have the schematic. There is a way to increase the gain of the LM380's beyond the internally set 50, using a couple of external components to form positive feedback. I have used this technique, it works well, but is prone to some instability and audio distortion. For CW, it may not be that apparent.

The information is NOT contained in any known data sheet for the LM380, but I did stumble across it in National Linear Application Notes AN-69. (Wayne: I can fax you the page with the gain equation and bode plot if you'd like to check applicability to the 40-9er).

HOW TO BOOST THE LM380 GAIN FROM 50 TO 200.

All references are to the 8-pin version of the LM380 (LM380N-8). Wayne squirts the audio into the inverting input (-IN, pin 3). Since we need positive feedback, this is great. Leave pin 3/audio input alone. The inverting input (+IN, pin 2) is grounded; so are pins 4 and 5, power ground. Isolate pin 2 from ground (cut the PC trace from pin 2 to ground; there is probably a trace from pin 2 to pin 4 and 5, an easy place to bust the trace if so). Insert a 15K or so resistor from pin 2 to ground. This can probably just be soldered on the trace side of the board from pin 2 to pin 4 (ground).

The audio output is pin 6, which goes to a 22uF audio coupling cap (C13) to the audio headphones. Note that the (+) side of C13 goes to the LM380 and the (-) side to the load/headphones. Connect a 1M resistor from the (-) side of C13 to LM380 pin 2 (+IN). This forms the positive feedback. But note: it MUST be dc isolated from the output on pin 6. This is why the 1M resistor MUST be connected to the load side (- side) of C13. Super, duper, like really important note.

That's it. The 1M resistor and 15K (pin 2 to ground) sets a closed loop gain of 200, according to AN-69. Seems when I did it on an LM380, I used a 10K from pin 2 to ground and a 470K (about a year ago on a regen receiver!). Your mileage may differ. A pot could also be used in lieu of the 1M resistor; it will mess up the high frequency roll-off, but

THIS IS AN UNTRIED MODIFICATION for the 40-9er. I hate to submit something I have not tried myself. I know it works in the application I used it for and should present no problems in the 40-9er. But, please be forewarned. And if anyone tries it, PLEASE post the results.

```

      |-----|<-LM380N-8
Audio in from RFC3 -----3|   |
                               + C13
      -----*-2|   |6-----| |-----*-> to headphones
      |         |-----|
15K    |         |
res    |         |
      |         |
gnd    |         |

```

Presumably, this approach should work on many of the monolithic audio amplifier IC's where the internal gain is fixed.

Paul NA5N

Newark Electronics has some ladder filters that look like they may have been made up from the ceramic resonators. Anyone know about these? Are they usable in homebrew rigs? Cost is about \$10.00.

Harley L. Miller hmliller@inf.net
WB0ROQ QRP-L #393

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: nskousen@scientechnology.com (Niel Skousen)
Subject: [5939] NC-40 Final
Message-ID: <v02130503ad7635011ce8@[198.60.91.132]>

I'm having a little trouble rounding up a couple of the 2SC799(? or better)
final Xstr for a Norcal NC-40 board I'm putting together. Anybody have a
source / replacement suggestion or a few extra's for sale ??

Niel Skousen, nskousen@scientechnology.com
SCIENTECH Special Projects
208-525-3742, 529-4721 (FAX) WA7SSA

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: WOHEP@aol.com
Subject: [5940] St. Louis, San Diego - need fax #
Message-ID: <960320174443_173203664@emout09.mail.aol.com>

Can someone in St. Louis and San Diego please e-mail me the fax number for
Gateway Electronics.

Tnx and please reply direct to WOHEP@aol.com

72 and CU in Dayton,

Rich WOHEP

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: "John Kirk, VE6XT" <jakirk@freenet.calgary.ab.ca>
Subject: [5943] Surplus Crystal Exchange
Message-ID: <Pine.A32.3.91.960320180544.26332F-100000@srv1.freenet.calgary.ab.ca>

Just so we don't leave anyone hanging (all 3 of you that responded):
While the idea is technically feasible, there does not appear to be

sufficient interest. Another one for the round file. Too bad - I'm on a roll. 5 six mtr beacons, one ten mtr beacon, 2 20 mtr qrp rigs and 1 222 Mhz rig all have crystals straight out of my junk box.
Happy soldering!
John

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Denton Larson <dlarson@ic.waseca.mn.us>
Subject: [5942] Tejas Backpacker question
Message-ID: <199603210040.SAA06431@IC.mankato.mn.us>

Hi Gang, I have a Tejas Backpacker II that I've been playing around with. I'm not too active with it, my CW is real rusty, but that's another story. My unit seems kinda drifty and I was wondering if anybody else has had any experience with them. Also the sidetone seems quite harsh, any mod ideas to smooth it out? I'll pass along the short tale of my first contact with it.

I had just finished tuneing it up, it helps to have access to a spectrum analyzer at work ;-) I brought it home and I was keying into the dummy load using my pocket knife shorting the key jack and listening on the ts440, so thought I would put my swl antenna on it. It's a couple of slinkys strung up in the attic. Well I heard a W3 calling CQ, Oh heck he won't hear me, (I never have checked where the slinkys resonate) so I slapped out his call with the pocket knife, a quick 1x2 call just for fun. Well you shoulda seen how big my eyes got when I heard my call come back. NOW WHAT DO I DO? :-)) Well I struggled through the contact but I guess I must have copied his call wrong, I couldn't find it in the call book. Anyway, it was fun, I just wanted to pass my experience along to the group, and when the conditions are right, it doesn't take much of an antenna.

I just finished the SW-30, Hope to meet up with the group on 10 MHZ.

Remember Dayton is just around the corner!!! :-)) :-))

72's Denton

WB0ZUR QRP-L #414

Denton K. Larson
dlarson@ic.waseca.mn.us
dlarson@efjohnson.com
71350.1667@compuserve.com

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: JC_Smith@designlink.com (JC Smith)
Subject: [5930] unsubscribe
Message-ID: <1703934.236633080@designlink.com>

Unsubscribe QRP-L

* * * * *
Sent from Designlink, San Francisco.
Online Service for Creative Professionals.
Modem: (510) 933-9676; (510) 845-4187; (415) 241-9927
Internet: Via TCP/IP PORT: 3000; IP: 206.14.15.3
WEB: <http://www.designlink.com>

* * * * *

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: "James H. Huss" <fjhh@fang.cs.sunyit.edu>
Subject: [5931] unsubscribe
Message-ID: <Pine.BSI.3.91.960320140105.29318A-100000@fang.cs.sunyit.edu>

Unsubscribe QRP-L

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Larry East <LVE1@inel.gov>
Subject: [5923] RE: 49er
Message-ID: <2.2.16.19960320163930.213fd95a@134.20.32.17>

Well, after seeing all the fun you folks have been having with your little 49er's, I decided to put mine together Sunday evening. Made a few changes in the transmitter:

- Driver transistor is a 2N4401.
- Final is a 2N4427 (with a small "push-on" finned heat sink).
- Changed choke in final collector from 15 uH to 22 uH - increased output power about 20%.
- Used toroid coil in place of choke as output filter inductor (22T of #28 on a T30-6 core).

I used an 78L06 in place of the 78L05 to give a little more "umph" to the NE602 -- should still work OK with a reasonably fresh 9V battery. On the subject of 78Lxx regulators -- these little rascals tend to oscillate if there is no bypass cap on their output. I suggest adding at least 0.1 uF across the output of the regulator in the 49er just to be on the safe side (I used 1uF in mine).

I also suggest adding a bypass cap from pin 8 of the LM380 to ground if you plan to run it from an AC power supply to eliminate power supply hum -- use an electrolytic or tantalum cap in the range 4.7 to 10 uF.

Using a 13.2V power supply, I am getting a full 1W out of the xmitter -- looks good and clean on my 'scope. Haven't tried it with 9V yet. What output power do others get as a function of supply voltage? Would like to know for comparison.

Receiver current is 18 mA; haven't checked xmit current. Output transistor gets warm running at 1W out, but not hot.

VXO tuning range is 5 kHz, as advertised (measured with a frequency counter). Is there any good reason for the configuration xtal-trimmer-choke rather than xtal-trimmer-choke? The latter would make tuning easier since one end of the trimmer would be grounded.

Now for the receiver -- audio output seems low, and tuning is very broad. Had to change C20 (I think it is) from 150 pF to 180 pF to get it to peak at other than the max capacitance end of the trimmer. I'm using a real J309 for the mute transistor, so don't think that is the problem ... unless running the NE602 at a higher voltage is screwing up the bias. Think I'll tack a jumper across the J309 and see if that increased the audio output...

Haven't had it on the air yet; maybe this weekend.

72, Larry W1HUE/7

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
 From: Kevin Muenzler <muenzlerk@uthscsa.edu>
 Subject: [5925] RE: 49er

Message-ID: <01BB164A.F290FDC0@muenzlerk.uthscsa.edu>

Larry East[SMTP:LVE1@inel.gov] wrote:

>Well, after seeing all the fun you folks have been having with your little
>49er's, I decided to put mine together Sunday evening. Made a few changes in
>the transmitter:

>

> - Driver transistor is a 2N4401.

> - Final is a 2N4427 (with a small "push-on" finned heat sink).

> - Changed choke in final collector from 15 uH to 22 uH - increased output
> power about 20%.

> - Used toroid coil in place of choke as output filter inductor (22T of #28
> on a T30-6 core).

>

<<SNIP>>

>Haven't had it on the air yet; maybe this weekend.

>

>72, Larry W1HUE/7

>

>

>

That poor little thing! You've created a monster! But, then that's what hamming
is all

about, tweak, smoke, tinker, until you get what you want out of the thing.

72, Kevin - WB5RUE

muenzlerk@uthscsa.edu

wb5rue@amsat.org

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996

From: Larry East <LVE1@inel.gov>

Subject: [5929] RE: 49er

Message-ID: <2.2.16.19960320172313.213787ce@134.20.32.17>

>On Wed, 20 Mar 1996, Larry East wrote:

>>

>> Is there any good reason for the configuration xtal-trimmer-choke
>> rather than xtal-trimmer-choke?

>>

>> 72, Larry W1HUE/7

>>

>

>What am I missing?

>

Sorry, that should have read "... rather than xtal-choke-trimmer" !!

Its ME that's missing something -- part of my brain! ;-)

72, Larry.

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: burdick@interval.com (Wayne Burdick)
Subject: [5932] RE: 49er
Message-ID: <v02130500ad7609199440@[199.170.106.28]>

Hi Larry,

You made about the same optimizations as I did to your 40-9er.

>VX0 tuning range is 5 kHz, as advertised...good reason for the
>configuration xtal-trimmer-choke rather than xtal-trimmer-choke?
>The latter would make tuning easier since one end of the trimmer
>would be grounded...

I thought the trimmer *was* at ground. If not, that's an error in either the PCB or the schematic or both. In any case, you can change the order of any series circuit so by all means put the trimmer at ground. Just don't use less than about 5pF minimum capacitance for the trimmer, as this may cause the '602 VX0 to stop oscillating.

>Now for the receiver -- audio output seems low...

It *is* low, due to the use of the fixed-gain LM380 (34dB). If you want more gain, you could use an LM386 instead, with a 1uF cap from pins 1-8 (and note that the pinouts are different for pins 5,6,7, and 8). Use of the LM380 rather than the LM386 saved one part, but the extra 8dB available from the '386 would be worth it (hindsight).

Another way to dramatically increase AF output would be to use balanced coupling from the '602 to the '380 (or '386), as in the Neophyte. But you'll have to add another JFET and at least one more cap. Again, even with the extra parts, this would be worth it, and I suggest that those who want more audio give it a try.

>tuning is very broad...change C20 from 150 pF to 180 pF to get it to peak at
>other than the max capacitance end of the trimmer...

I considered this change at the last minute but was too late for the QRPp article deadline. Definitely go with 180pF if your tuning cap ends up at the MAX end of its range.

>unless running the NE602 at a higher voltage is screwing up the bias...

Nope. In fact, 6 volts will work better all the way around.

Thanks for posting your changes. This is really a bare-bones little rig, and you could easily nickle and dime it to 50 or 60 parts, which I fully expect some people to do. Go for it!

73,
Wayne

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Paul Harden <pharden@aoc.nrao.edu>
Subject: [5927] Re: FOX, Addiction, AA and Church
Message-ID: <199603201705.KAA17370@zia.aoc.nrao.edu>

Dennis,
I suggest you attend a meeting of your local FOXanon chapter or FOXaholic anonymous. I had to last year and darn worth it. I can probably survive this year with only a couple of sensitivity sessions.

Paul NA5N

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Alan Kaul <kaul@netcom.com>
Subject: [5946] Re: Fwd: 49-er Measurements
Message-ID: <Pine.3.89.9603201942.A2453-01000000@netcom19>

Tom -- I think you're right about the impedance changing with the voltage. I should have thought of that when I had my 15 minutes on the test bed!!!! I'll try it again tomorrow and hope to have an answer right here. 73/72 de alan

[<Alan Kaul, W6RCL>] kaul@netcom.com

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: JCoote@aol.com
Subject: [5936] Re: IC735 and QRP
Message-ID: <960320162928_251272179@emout04.mail.aol.com>

In a message dated 96-03-20 07:45:45 EST, blombard@bb.iu.net (Bob Lombardi) writes:

>Folks,
>
>I'm fairly new to this list, but I've heard some sort of story that there
>is a simple mod to the IC735 that will allow you to go below 10 watts.
>
>Could someone tell me if it's true, and if so, what parts get changed or
>tweaked or whatever?

There are two trim pots, inside under the chassis (someone give the location and numbers, I forget).

The adjustments are interactive, but basically control the upper power limit on the radio which should be no more than 100 watts with the power slider pot on the front all the way up.

A readjustment should allow three watts at the lowest front panel setting, through 100 watts, continuous.

There is also a 50-100 watt switch inside in case you want a something-to-50 watt adjustable radio.

It works, I've done two of them- no wire hangies, science projects, kluges or holes in the radio!

73, Jay
WB6AAM

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Jim Eshleman <lujce@hooch.cc.lehigh.edu>
Subject: [5924] Re: LeHigh.EDU stuff [long]
Message-ID: <96Mar20.115313est.57461-11573+57@hooch.CC.Lehigh.EDU>

Gang,

Chuck's post reminded me...

Thanks to Smitty, NA5K (who wrote the code) there's a variation of the QRP_CALL command which will return a short list of QRP-L subscribers sorted by call within zone. It's a "short" list because only the first name and callsign of each subscriber is included, printed four across. Just the thing to keep next to the rig. So, to run the command:

```
RUN QRP-L X QRP_SCALL
```

My apologies to Smitty for sitting on this for so long.

73

Jim N3VXI

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: "Rafael Garcia (EA4RJ)" <tie@bitmailer.net>
Subject: [5933] Re: LeHigh.EDU stuff [long]
Message-ID: <Pine.LNX.3.91.960320155512.526A-1000001@ea4rj.ampr.org>

On Wed, 20 Mar 1996, Chuck Adams wrote:

```
>      RUN QRP-L X GC 40.3476N75.2046W 32.4700N96.4800W
```

```
>
```

```
>      and you will get back the distance. Then you can
```

```
>      calculate the miles per watt number.
```

```
----- snip -----
```

Chuck and all

For DX contacts, why not use the International Locator Map? It is a very common use among the VHFers. Sure the server can translate between the six digit code into coordinates, and reverse. The accuracy is under 5km if I remember well.

Regards,

Rafael, EA4RJ at IN80EJ
Madrid (Spain)

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Alan Kaul <kaul@netcom.com>
Subject: Measuring 49-er Performance
Message-ID: <Pine.3.89.9603201142.A29296-0100000@netcom22>

Greetings:

One of the perks of working in the broadcast business is occasionally getting into the shop to play with the toys. This morning, I was able to do just that with the 49-er (aka 40-9er) designed by N6KR and offered by the Norcal QRP club.

All of the tests were made using a Motorola Communications System Analyzer -- model series R-2000 (no label on this one, it might have been an R-2001 for example). Performance was measured using various power supply voltage levels, at 7.040 kHz.

OUTPUT POWER AS A FUNCTION OF INPUT VOLTAGE

Voltage (under load) Power output (sum of all emissions)*

7.0 (AC supply)	0.26
8.26 (used 9v bat)	0.32
8.52 (used 9v bat)	0.33
8.94 (new 9v bat)	0.39
9.0 (AC supply)	0.42
12.0 (AC supply)	0.70
12.5 (AC supply)	0.74
13.4 (AC supply)	0.80

* -- The test gear is absorptive, the power measured =
the sum total of the power on the primary frequency
plus the 1st harmonic, plus the 2nd harmonic, etc.

RELATIVE POWER OUTPUT BASED ON FREQUENCY ** (see below)

Supply voltage = 12V (AC supply)

Frequency (mHz)	Power output (W)
7.038	0.65
7.040	0.70
7.0459	0.53

** -- In my rig, the VX0 variable capacitor is not the

one specified: it has a slightly larger tuning range (8-60pf)

HARMONIC CONTENT (using 12V power supply, at 7.040 mHz, 0.70 watts)

	F1	F2	F3
Freq	7.040	14.080	21.120
Signal	0 dB	-16 dB	-38 dB

NOTE: The key-down for 13.4V was approximately 2-minutes. I did not have a heat sink installed on the 2N3866 and it ran quite hot. I'd recommended not running it at that power level without a heat sink.

I make no claims for the output of any 49-er other than my own -- yours mayor may not perform similarly.

The 49-er is a great little rig. Wayne has done a terrific job -- he's been able to get a lot of out of a tiny Altoids' box!

[<Alan Kaul, W6RCL>] kaul@netcom.com

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Paul Harden <pharden@aoc.nrao.edu>
Subject: [5918] Re: Mini-circuits MCL-4-3
Message-ID: <199603201521.IAA13200@zia.aoc.nrao.edu>

John N5INZ,
The MiniCircuits PSC-4-3 is a "4-way 0-degree Power Splitter."
Basically, this is a passive device that takes an input signal and splits it into 4 equal outputs, where each output will be the same amplitude, same phase (thus, the 0-degrees between output ports) and high isolation (a heavy load on one port will no effect the output of another port).

For the PSC-4-3:
Frequency Range: .25 to 250 MHz
Isolation between ports: ~30dB (freq. dependent)
Insertion Loss: 0.4dB typ. 0.7dB max

Price (1-9): \$31.95

Bottom of the "can":

```
pin 2  1  -- blue dot
      4  3
      6  5
      8  7
```

Input port is pin 4; output ports are pins 7,8,1,2
Pins 3,5,6 are connected to the case and should be grounded.

Do you have an intended application for it?

GL, Paul NA5N

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Ed Kleckner <ekleck@kendaco.telebyte.net>
Subject: [5920] Re: Mini-circuits MCL-4-3
Message-ID: <Pine.LNX.3.91.960320072822.5510B-100000@kendaco.telebyte.com>

The MCL-4-3 is a 4-way 0 degree power splitter 0.25-250 MHz.

Hope this helps...
72 de N7YQR

```
~~~~~  
~ Ed Kleckner, N7YQR ~  
~ ekleck@kendaco.telebyte.com ~  
~~~~~
```

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Larry East <LVE1@inel.gov>
Subject: [5921] RE: New QRP+ Info Request
Message-ID: <2.2.16.19960320154241.213f3c40@134.20.32.17>

Last Thursday, I posted the following request:

```
>I'm looking for someone who has received a "New and Improved" QRP-PLUS who  
>is willing to supply me with a schematic in return for an SASE. I'm in the  
>process of assembling mod info for the original QRP+ and I'm interested in  
>seeing how all the enhancements were implemented in the new model.  
>
```

The response was underwhelming -- NONE! I did get what I needed, but as the

result of a direct request to someone that I knew had one of the "new and improved" models.

Someone made the observation that most QRP+ owners never look inside 'em and/or are afraid to muck about in 'em -- that's understandable, but what I don't understand is the lack of response to my request when most other requests for info on this list result in many helpful responses (and, well, maybe a few not to helpful... but that is to be expected).

72, Larry W1HUE/7

From owner-qrp-l@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: GREGOIRE@endor.com (ERNEST GREGOIRE)
Subject: [5944] RE: New QRP+ Info Request
Message-ID: <199603210230.VAA25207@nss2.CC.Lehigh.EDU>

>Last Thursday, I posted the following request:

>

>>I'm looking for someone who has received a "New and Improved" QRP-PLUS who
>>is willing to supply me with a schematic in return for an SASE. I'm in the
>>process of assembling mod info for the original QRP+ and I'm interested in
>>seeing how all the enhancements were implemented in the new model.

>>

>

>The response was underwhelming -- NONE!

>72, Larry W1HUE/7

Hello Larry,

I'd like to have ben able to help you out, but my new and improved QRP+ is still in Gig Harbor. From what I read here it will be at least a month late beyond the promised date.

de AA1IK N.E.-QRP-C. # 202 (Lead by example, It is better to)
 QRP-L member #95. (pull a string than it is to push it.)

Ernie Gregoire
RR 1 Box 221
Canaan, NH. 03741

New England QRP Club, information
available on request by sending me a
S.A.S.E. or via E-mail.

e-mail : GREGOIRE@ENDOR.COM

packet : AA1IK@WA1WOK.FN43FE.NH.USA

From owner-qrp-1@Lehigh.EDU Wed Mar 20 22:06:25 1996
From: Larry East <LVE1@inel.gov>
Subject: [5928] RE: New QRP+ Schematics
Message-ID: <2.2.16.19960320171825.213f1c7e@134.20.32.17>

On 20 March Allen, K9DZE wrote (relative to "new and improved" QRP+):

>... I guess that your lack of any response is probably due to the fact that
>no one on the list has actually received an updated radio yet.
>

Guess that is indeed the case; I thought they were in full shipment by now!

Sorry about my POed post -- next time I'll try to make sure my brain is in gear before engaging fingers... :-)

72, Larry.